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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,015	07/20/2001	Hillel Weinstein	82031-0006	9358
49443	7590	02/21/2007	EXAMINER	
PEARL COHEN ZEDEK LATZER, LLP			HOSSAIN, FARZANA E	
1500 BROADWAY 12TH FLOOR			ART UNIT	PAPER NUMBER
NEW YORK, NY 10036			2623	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	02/21/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	09/830,015	WEINSTEIN ET AL.
	Examiner Farzana E. Hossain	Art Unit 2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 December 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 58-60,62-66,68,72-80,84 and 86-89 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 58-60,62-66,68,72-80,84 and 86-89 is/are rejected.
- 7) Claim(s) 60,64,66,72,74-76,88 and 89 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 21 December 2006 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to communications filed 12/21/2006. Claims 58-60, 62-66, 68, 72-80, 84, 86-89 are pending. Claims 1-57, 61, 67, 69-71, 81-83, 85, 90-95 are cancelled. Claims 58, 59, 62, 65, 68, 73, 77-80, 84, 87 are amended. Claims 60, 64, 66, 72, 74-76, 88, 89 have been previously presented.

Response to Arguments

2. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 12/21/2006 have been fully considered but they are not persuasive.

In regard to claim 59, the applicant argues that Williamson, Terry, Eldering and Rakib alone or in combination do not teach: a first multiplexer filter section for selecting the extend frequency range in a first direction of the communication network and a second multiplexer filter section for selecting the extended frequency range in a second direction of the communication network and a first amplification section for amplifying the selected extended frequency range in a first direction of the communication network and a second amplification section for amplifying the selected extended frequency

range in a second direction of the communication network, the first and the second amplification sections comprising one or more equalizers which allow control of gain, slope and/or amplitude of the selected extended frequency range in the first or second direction of the communication network respectively to correct cable attenuation slope over frequency introduced into the selected extended frequency range, low pass filters to provide signal in the frequency range already in use and AC power to line distribution device a power supply to supply power to the amplifying circuits and choke to extract AC power from the input port to provide power to the power supply.

The examiner respectfully disagrees. Williamson discloses a first multiplexer filter section for selecting the extend frequency range in a first direction of the communication network (Figure 6, 122, 120) and a second multiplexer filter section for selecting the extended frequency range in a second direction of the communication network (Figure 6, 120, 122) and a first amplification section for amplifying the selected extended frequency range in a first direction of the communication network (Figure 6, 130) and a second amplification section for amplifying the selected extended frequency range in a second direction of the communication network (Figure 6, 132, 124), low pass filters to provide signal in the frequency range already in use (Figure 6, 122). Terry provides the signal to a line distribution device (Column 3, lines 39-40). Williamson does not teach the remaining limitations. See new grounds of rejection for remaining limitations.

In regard to claim 84, the applicants argue that Williamson and Dan alone or in combination do not teach or suggest at least a first multiplexer filter section for separating at least two downstream signal streams received from input for selective processing as the headend is sending multiple downstream signal streams and a second multiplexer filter section for separating two upstream signal streams received from the output for selective processing as the users are sending multiple upstream signal streams, low pass filters to provide signal in the frequency range already in use and AC power to a line distribution device, downstream equalizer, downstream amplifier and a downstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two downstream signal streams representative of information units transmitted by a transmission center to users, a upstream equalizer, upstream amplifier and a upstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two upstream signal streams sent by users to a transmission center and; a choke to extract AC power from the input to provide power to the power supply.

The examiner respectfully disagrees. Williamson discloses a first multiplexer filter section for separating at least two downstream signal streams received from input for selective processing as the headend is sending multiple downstream signal streams (Figure 6, 122) and a second multiplexer filter section for separating two upstream signal streams received from the output for selective processing as the users are sending multiple upstream signal streams (Figure 6, 120, 122) and a downstream amplifier (Figure 6, 130) and an upstream amplifier (Figure 6, 132, 124), low pass filters

to provide signal of the second signal stream of the at least two downstream signal streams in use for distribution (Figure 6, 122). See new grounds of rejection for remaining limitations.

Regarding Claim 87, the applicants argue that Williamson and Terry do not teach or suggest “separately amplifying the broadband signal to and from a the plurality of users for compensating for line drop losses due to network infrastructure topography; separately adding gain and slope to the broadband signal to and from the plurality of users, separately filtering the broadband signal dividing the broadband signal according to frequency regions; providing a signal in a frequency range to a line distribution unit via low pass filters, tuning the divided signal for controlling the division of the divided signal into predefined frequency regions, extracting by a choke AC power to a power supply for supplying power to amplifying circuits.

The examiner respectfully disagrees. Williamson discloses separately amplifying the broadband signal to and from the plurality of users for compensating for line drop loses due to network infrastructure topography (Column 4, lines 39-42, Figure 4, Figure 6, 120, 122); adding gain to the broadband signal for compensating for signal loss in opposing directions (Column 3, lines 47-60, Column 4, lines 39-50), separately filtering the broadband signal dividing the broadband signal according to frequency regions (Figure 6, 122, 120) and providing a signal in a frequency range already in use via low pass filters (Figure 6, 122). See new grounds of rejection for remaining limitations.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "a communication network line distribution unit coupled to the output connection of the compensation unit for receiving the downstream signal, the line distribution unit having an output connection for providing the downstream and upstream signal" as found in claims 72 and 86. The specification should be amended to include the claim language without including new matter.

Claim Objections

4. Claims 60, 64, 66, 72, 74-76, 86, 88, 89 are objected to because of the following informalities: Claims are listed as "previously filed". The applicant should have claim headings from "previously filed" to --previously presented--. Appropriate correction is required.

5. Claim 72 is objected to because of the following informalities: The claim depends from cancelled claim 70. It is assumed that Claim 72 depends from Claim 58. Appropriate correction is required.

6. Claim 84 is objected to because of the following informalities: The claim has a minor typographical error: "an transmission center". The Office assumes "an" to be --a--
Appropriate correction is required.

7. Claim 86 is objected to because of the following informalities: The claim depends from cancelled claim 85. It is assumed that Claim 86 depends from Claim 84.
Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 84 and 86 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims are not described fully in the specification including but not limited to the following:

Claim 84 is not fully described in the specification for subject matter for low pass filters to provide signal in a second of said at least two downstream signal streams.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 84 and 86 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 84 recites "low pass filters to provide signal in a second of said at least two downstream signal streams" which is unclear and vague. Due to the context of the claim, the Office assumes "low pass filters to provide signal in a second of said at least two downstream signal streams" to be --low pass filters to provide signal of said at least two downstream signal streams--. The overall meaning of the claim limitation is assumed to be providing the signal of the second signal stream of the at least two downstream signal streams.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 58-60, 66, 68, 72-74, 76, 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson (US 5,774,458) in view of Terry et al (US 5,499,047 and hereafter referred to as "Terry"), Eldering et al (US 5,881,362 and hereafter referred to

as "Eldering"), Jung (US 2003/0066088) and Jelinek et al (US 6,199,207 and hereafter referred to as "Jelinek"). (Note: Williamson (Column 3, lines 35-41) incorporates Adams et al (US 5,819,036, Application number 08/572,521 and hereafter referred to "Adams") by reference for a more detailed description of the network.)

Regarding Claim 58, Williamson discloses a system for extending the transmission bandwidth of a communication network in two-way across an enhanced range of frequencies (Column 4, lines 39-41, Column 3, lines 15-35, Figure 6), the network comprising a head end unit (Figure 1, 12), at least one hub or node connected to the head end unit (Figure 1, 26, a plurality of set top boxes (STB), the enhanced range of frequencies comprising a frequency range already in use by the communications network (Figures 4-5) and extended frequency range (550-1000 MHz) for signals from the headend (Figure 1, 12), the system comprising: a plurality of compensation units having input and output ports distributed at predetermined locations within the network for refreshing and maintaining the characteristics of the extended frequency range to overcome line drop losses associated with the extended frequency range due to network infrastructure topography or amplifier or amplifiers (Figures 4, 5, 6, 110, 112, 114), which are placed along the feeder cable to amplify the signal, each compensation unit comprises: a first multiplexer filter section for selecting the extend frequency range in a first direction of the communication network (Figure 6, 122, 120) and a second multiplexer filter section for selecting the extended frequency range in a second direction of the communication network (Figure 6, 120, 122) and a first amplification section for amplifying the selected extended frequency range in a first

direction of the communication network (Figure 6, 130) and a second amplification section for amplifying the selected extended frequency range in a second direction of the communication network (Figure 6, 132, 124), low pass filters to provide signal in the frequency range already in use (Figure 6, 122).

Williamson is silent on the extended range of frequencies beyond 1 GHz for additional channels, a plurality of home outlet units with a plurality of STBs connected each to the home outlet unit, the first and the second amplification sections comprising one or more equalizers which allow control of gain, slope and/or amplitude of the selected extended frequency range in the first or second direction of the communication network respectively to correct cable attenuation slope over frequency introduced into the selected frequency range, low pass filters to provide signal in the frequency range already in use and AC power to line distribution device a power supply to supply power to the amplifying circuits and choke to extract AC power from the input port to provide power to the power supply, and an enhanced home outlet unit comprising a filter for separating the extended frequency range from the frequency range already in use, whereby enabling transmission of data an extended data range of frequencies and at substantially higher data rates.

Terry discloses a cable television network (Figure 1), from a headend for transmitting television signals to customer premises (Column 4, lines 38-50, Column 5, lines 33-41). Terry discloses compensation units in plurality of predetermined locations (Figure 1). Terry discloses over the network transmission the enhanced range of frequencies comprising an extended frequency range beyond 1 GHz for additional

channels (Column 5, lines 33-53, Column 6, lines 1-10) and providing a signal in a frequency range to a distribution unit (Figure 1, 34, Column 4, lines 7-40). Terry discloses that the additional channels are in the extended frequency range from 550-1150 MHz (Column 5, lines 33-53) whereby enabling transmission of data at an extended range of frequencies and at substantially higher data rates (Column 5, lines 33-53).

Eldering discloses a network with a node, a home outlet unit, and a set top box connected to the home outlet unit (Figure 1, 71, 43, 25). Eldering discloses a plurality of home outlets connected to the at least one hub or node via cables (Figure 1, 71, 43, 25, 45), a plurality of set top boxes (STB) (Figure 1, 25, 27, Column 2, lines 53-55) connected each to a home outlet unit (Figure 1, 43), an enhanced home outlet unit comprising a frequency conversion filtering circuit for separating the extended frequency range from the frequency range already in use or a filter for separating the extended frequency range from the frequency range already in use or filtering the frequency range in use from the extended frequency range (Column 5, lines 6-25). Eldering disclose a plurality of residences (Column 3, line 5), which would each include filters or home outlet units (Figure 1, 43).

Jung discloses a compensation unit comprising a first and a second amplification sections comprising one or more equalizers which allow control of gain, slope and/or amplitude of the selected extended frequency range in the first or second direction of the communication network respectively to correct cable attenuation slope over frequency introduced into the selected extended frequency range (Figure 5, Page 2,

paragraph 0037, 0041-0044). Jelinek discloses a low pass filter to provide AC power to line distribution device a power supply to supply power to the amplifying circuits and choke to extract AC power from the input port to provide power to the power supply (Column 4, lines 26-62).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Williamson to include an extended frequency range beyond 1 GHz for additional channels (Column 5, lines 33-53, Column 6, lines 1-10) whereby enabling transmission of data at an extended range of frequencies and at substantially higher data rates (Column 5, lines 33-53) and providing a signal in a frequency range to a line distribution unit (Figure 1, 34, Column 4, lines 7-40) as taught by Terry as there is an increasing desire for additional capacity in CATV distribution networks (Column 1, lines 41-51) as disclosed by Terry. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Williamson to include a plurality of home outlets connected to the at least one hub or node via cables (Figure 1, 71, 43, 25, 45), a plurality of set top boxes (STB) (Figure 1, 25, 27, Column 2, lines 53-55) connected each to a home outlet unit (Figure 1, 43), an enhanced home outlet unit comprising a frequency conversion filtering circuit for separating the extended frequency range from the frequency range already in use or a filter which filters the frequency range in use from the extended frequency range (Column 5, lines 6-25) and a plurality of residences (Column 3, line 5), which would each include filters or home outlet units (Figure 1, 43) as taught by Eldering in order to not receive undesirable signals (Column 5, lines 6-25) as disclosed by Eldering. Therefore, it would have been obvious to one of

ordinary skill in the art to modify Williamson to include a compensation unit comprising a first and a second amplification sections comprising one or more equalizers which allow control of gain, slope and/or amplitude of the selected extended frequency range in the first or second direction of the communication network respectively to correct cable attenuation slope over frequency introduced into the selected extended frequency range (Figure 5, Page 2, paragraph 0037, 0041-0044) as taught by Jung in order to maintain signal strength (Page 1, paragraph 0002, Page 2, paragraph 0027) as disclosed by Jung. Therefore, it would have been obvious to one of ordinary skill in the art to modify Williamson to include a low pass filter to provide AC power to line distribution device a power supply to supply power to the amplifying circuits and choke to extract AC power from the input port to provide power to the power supply (Column 4, lines 26-62) as taught by Jelinek in order to provide uninterrupted service to subscriber with a maintained power supply (Column 1, lines 20-60, Column 2, lines 1-9) as disclosed by Jelinek.

Regarding Claim 59, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Williamson discloses utilizing a plurality of forward channels and distributing video, analog and digital information (Column 3, lines 15-25, Column 4, lines 1-6). Adams discloses a plurality of forward channels and distributing audio, video, and data information unit on (Column 4, lines 33-46, Figure 5). Terry discloses a plurality of channels (Column 5, lines 33-40).

Regarding Claim 60, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Terry discloses a range of 950 MHz to 1150 MHz, which is

within the claimed range and therefore anticipates the claimed range of about 1 GHz to about 3 GHz.

Regarding Claim 66, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Terry discloses an enhanced cable connector assembly comprising a coaxial adapter fitted to a standard cable connector for allowing the transmission of a signal modulated across the extended frequency range or tap which is provided with a drop unit which can allow the transmission of signals modulated over the extended frequency range as the frequency range can be 950 to 1150 MHz (Column 5, lines 6-50).

Regarding Claim 68, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Williamson discloses the first multiplexer filter section and the second multiplexer filter section are single stage multiplexers for separating the enhanced range of frequency to the frequency range already in use with low end amplifiers (Figure 4, 5, 6), an extended downstream frequency range or high end filter (Figure 6, 122) and an extended upstream frequency range or high end filter (Figure 6, 120).

Regarding Claim 72, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 70. Terry discloses the compensation unit further comprises a communication network line distribution unit coupled to the output connection of the compensation unit for receiving the downstream signal, the line distribution unit having an output connection for providing the downstream and upstream signal (Figure 1, 34, Column 5, lines 7-32).

Regarding Claim 73, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Terry discloses an enhanced home outlet unit or termination unit an amplifier for compensating for the losses in the extended frequency range (Column 4, lines 46-60). Eldering includes an in home splitter (Figure 1, 41) which allows the signals to be modulated and delivered to multiple users or set tops or personal computers (Column 2, lines 52-55).

Regarding Claim 74, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Williamson discloses the compensation unit is connected to the communications network as a standalone unit (Figure 4, 5, 6). Eldering discloses compensation unit as a standalone unit (Figure 1, 61). Terry discloses a standalone unit (Figure 1, 12).

Regarding Claim 76, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Williamson discloses the compensation unit supports two-way transmission of signals in the extended frequency range (Figure 4, 5, 6). Terry discloses supporting two way asymmetrical transmission of signal in the frequency range already in use and the extended frequency range or an extended frequency range of 950 to 1150 MHz in the downstream direction and 1150 to 1350 in the upstream direction (Column 5, lines 33-60). Eldering includes an in home splitter (Figure 1, 41) which allows the signals to be modulated and delivered to multiple users or set tops or personal computers (Column 2, lines 52-55), which allows two way transmission (Figure 34-41).

Regarding Claim 80, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 73. Terry discloses an enhanced home outlet unit (Figure 1, 32, Column 5, lines 1-7) supports two way asymmetrical transmission of signal in the frequency range already in use and the extended frequency range or an extended frequency range of 950 to 1150 MHz in the downstream direction and 1150 to 1350 in the upstream direction (Column 5, lines 33-60).

14. Claims 62, 63, 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson in view of Terry, Eldering, Jung and Jelinek as applied to claim 58 above, and further in view of Preschutti (US 4,970,722).

Regarding Claim 62, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Terry discloses extended frequency range beyond 1 GHz (Column 5, lines 33-45). Williamson, Terry, Eldering, Jung and Jelinek are silent on a hub or node module connected to the hub or node for adding gain and slope to losses to the frequency range. Preschutti discloses bidirectional communication among a plurality of network user devices and external devices networks and databases (Column 9, lines 61-68, Column 10, lines 1-2). Preschutti disclose a central hub (Figure 3, 102) and a node, which is connected to the hub (Figure 3, 110) for adding gain and slope to losses to the frequency range or adding gain for the loss (Column 10, lines 19-68, Figure 5). Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination to include a node which is connected to the hub (Figure 3, 110) for adding gain and slope to losses to the frequency range or adding gain for the loss

(Column 10, lines 19-68, Figure 5) as taught by Preschutti in order to provide easier to design, install, maintain and rearrange networks that are lower cost (Column 1, lines 56-59) as disclosed by Preschutti.

Regarding Claim 63, Williamson, Terry, Eldering, Jung, Jelinek and Preschutti disclose all the limitations of Claim 62. Terry discloses extended frequency range beyond 1 GHz (Column 5, lines 33-45). Preschutti discloses the node module or node comprises a data communication unit, the data communication unit comprises a duplex receiver or transmitter for communicating data across the frequency range as the node is able to receive and transmit data over a bidirectional path (Figure 3, Figure 5, Figure 6).

Regarding Claim 78, Williamson, Terry, Eldering, Jung, Jelinek and Preschutti disclose all the limitations of Claim 62. Terry discloses extended frequency range beyond 1 GHz (Column 5, lines 33-45) and the asymmetrical network (Column 5, lines 33-60).

15. Claims 64, 65, 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson in view of Terry, Eldering, Jung, Jelinek and Preschutti as applied to claim 63, 62 above, and further in view of Ahmed et al (US 2005/0114903 and hereafter referred to as "Ahmed").

Regarding Claim 64, Williamson, Terry, Eldering, Jung, Jelinek and Preschutti disclose all the limitations of Claim 63. Williamson, Terry, Eldering, Jung, Jelinek and Preschutti are silent on a receiver transmitter for receiving data from a data

communication network and for transmitting data to the data communication network, a demodulator-modulator for encoding the data; and a data router for directing the data to the data communication network and for directing the data to a central processing unit for processing. Ahmed discloses a network with headend (Figure 1B, 106), which is connected to hub (Figure 1B, 124), node (Figure 1B, 126) and a plurality of STB (Figure 1, 134). Ahmed discloses the data communication unit or digital node transceiver (Figure 1B, 145) comprising a receiver-transmitter (Page 3, paragraph 0036) for receiving the data from a data communication network and for transmitting the data to the data communication network (Pages 3-4, paragraphs 0042-0043), a demodulator-modulator or modulator for encoding the data (Pages 3-4, paragraphs 0042-0043), and a data router for directing data to the data communication network (Figure 1B, Figure 10) or routing data to particular home (Figure 1B, Page 4, paragraph 0043) and for directing the data to a central processing unit for processing (Figure 10, 1010). Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination to include a data communication unit or digital node transceiver (Figure 1B, 145) comprising a receiver-transmitter (Page 3, paragraph 0036) for receiving the data from a data communication network and for transmitting the data to the data communication network (Pages 3-4, paragraphs 0042-0043), a demodulator-modulator or modulator for encoding the data (Pages 3-4, paragraphs 0042-0043), and a data router for directing data to the data communication network (Figure 1B, Figure 10) or routing data to particular home (Figure 1B) and for directing the data to a central processing unit for processing (Figure 10, 1010) as taught by Ahmed in order to provide

interactive services to the subscribers (Page 2, paragraph 00015) as disclosed by Ahmed.

Regarding Claim 65, Williamson, Terry, Eldering, Jung, Jelinek and Preschutti disclose all the limitations of Claim 63. Williamson, Terry, Eldering, Jung, Jelinek and Preschutti are silent on a multiplexer for communing a signal generated by the head end with data transmitted from the data communication unit. Ahmed discloses a network with headend (Figure 1B, 106), which is connected to hub (Figure 1B, 124), node (Figure 1B, 126) and a plurality of STB (Figure 1, 134). Ahmed discloses the node comprising a multiplexer for combining a signal generated by the head end with data transmitted from the data communication unit or transceiver which is met by the node performing narrowcasting which allows a more tailored programming to be sent to the users for more interactive services as wells adding channels at the node (Page 4, paragraph 0043) and data from the headend is supplied to the node and then to the transceiver or data communication unit (Page 3, paragraph 0042). Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination to include the node comprising a multiplexer for combining a signal generated by the head end with data transmitted from the data communication unit or transceiver (Page 4, paragraph 0043, Page 3, paragraph 0042) as taught by Ahmed in order to provide interactive services to the subscribers (Page 2, paragraph 00015) as disclosed by Ahmed.

Regarding Claim 77, Williamson, Terry, Eldering, Jung, Jelinek and Preschutti disclose all the limitations of Claim 62. Terry discloses extended frequency range

beyond 1 GHz (Column 5, lines 33-45). Preschutti discloses the node supports two-way transmission (Figure 3, 5, 6). Williamson, Terry, Eldering, Jung, Jelinek and Preschutti are silent on the node is connected as a symmetrical device to support two way symmetrical transmission of signals. Ahmed discloses a network with headend (Figure 1B, 106), which is connected to hub (Figure 1B, 124) and node (Figure 1B, 126) and a plurality of STB (Figure 1, 134). Ahmed discloses two-way symmetrical transmission or sending as much information in the upstream direction as in the downstream (Page 2, paragraph 0015). Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination to include two way symmetrical transmission or sending as much information in the upstream direction as in the downstream (Page 2, paragraph 0015) as taught by Ahmed in order to provide interactive services to the subscribers (Page 2, paragraph 00015) as disclosed by Ahmed.

16. Claims 75, 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson in view of Terry, Eldering, Jung and Jelinek as applied to claim 58, 73 above, and further in view of Ahmed.

Regarding Claim 75, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 58. Williamson discloses compensation unit (Figure 4, 5, 5). Eldering discloses compensation unit (Figure 1, 61). Terry discloses extended frequency range beyond 1 GHz (Column 5, lines 33-45). Williamson, Terry, Eldering, Jung and Jelinek are silent on the node is connected as a symmetrical device to support two way symmetrical transmission of signals. Ahmed discloses a network with headend

(Figure 1B, 106), which is connected to hub (Figure 1B, 124) and a plurality of STB (Figure 1, 134). Ahmed discloses two-way symmetrical transmission or sending as much information in the upstream direction as in the downstream (Page 2, paragraph 0015). Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination to include two way symmetrical transmission or sending as much information in the upstream direction as in the downstream (Page 2, paragraph 0015) as taught by Ahmed in order to provide interactive services to the subscribers (Page 2, paragraph 00015) as disclosed by Ahmed.

Regarding Claim 79, Williamson, Terry, Eldering, Jung and Jelinek disclose all the limitations of Claim 73. Terry discloses extended frequency range beyond 1 GHz (Column 5, lines 33-45) and a home splitter unit (Figure 1). Williamson, Terry, Eldering, Jung and Jelinek are silent on the node is connected as a symmetrical device to support two way symmetrical transmission of signals. Ahmed discloses a network with headend (Figure 1B, 106), which is connected to hub (Figure 1B, 124) and a plurality of STB (Figure 1, 134). Ahmed discloses two-way symmetrical transmission or sending as much information in the upstream direction as in the downstream (Page 2, paragraph 0015). Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination to include two way symmetrical transmission or sending as much information in the upstream direction as in the downstream (Page 2, paragraph 0015) as taught by Ahmed in order to provide interactive services to the subscribers (Page 2, paragraph 00015) as disclosed by Ahmed.

17. Claims 84, 86-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson in view of Terry, Jung and Jelinek. (Note: Williamson (Column 3, lines 35-41) incorporates Adams et al (US 5,819,036, Application number 08/572,521 and hereafter referred to "Adams") by reference for a more detailed description of the network.)

Regarding Claim 84, Williamson discloses a compensation unit dividing and amplifying a signal having input and output port (Figures 4, 5, 6, 110, 112, 114) comprising a first multiplexer filter section for separating at least two downstream signal streams received from input for selective processing as the headend is sending multiple downstream signal streams (Figure 6, 122) and a second multiplexer filter section for separating two upstream signal streams received from the output for selective processing as the users are sending multiple upstream signal streams (Figure 6, 120, 122) and a downstream amplifier (Figure 6, 130) and an upstream amplifier (Figure 6, 132, 124), low pass filters to provide signal of the second signal stream of the at least two downstream signal streams for distribution as the low pass filters provide signals of multiple signal streams for distribution (Figure 6, 122). Williamson is silent on compensation unit comprising a downstream equalizer and a downstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two downstream signal streams representative of information units transmitted by a transmission center to users, a upstream equalizer and a upstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two upstream signal streams sent by users to a transmission center, to provide signal of at least two

downstream signal stream and AC power to a line distribution device; a choke to extract AC power from the input to provide power to the power supply.

Terry discloses providing signal of the first and second signal of the at least two downstream signal streams to a line distribution device as at least two downstream signals are provided through the compensation unit to the distribution units to users (Figure 1, Column 4, lines 7-40). Jung discloses a compensation unit comprising a downstream equalizer, a downstream amplifier and a downstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two downstream signal streams representative of information units transmitted by a transmission center to users (Figure 5, Page 2, paragraph 0039-0045) and a upstream equalizer, a upstream amplifier and a upstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two upstream signal streams sent by users to a transmission center (Figure 5, Page 2, paragraph 0039-0045). Jelinek discloses a low pass filter to provide a choke AC power to line distribution device and to extract AC power from the input to provide power to the power supply (Column 4, lines 26-62).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Williamson to include providing signal of the first and second signal of the at least two downstream signal streams to a line distribution device (Figure 1, Column 4, lines 7-40) as taught by Terry as there is an increasing desire for additional capacity in CATV distribution networks (Column 1, lines 41-51) as disclosed by Terry. Therefore, it would have been obvious to one of ordinary skill in the art to modify Williamson to include a

compensation unit comprising a downstream equalizer, a downstream amplifier and a downstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two downstream signal streams representative of information units transmitted by a transmission center to users (Figure 5, Page 2, paragraph 0039-0045) and a upstream equalizer, a upstream amplifier and a upstream tilt equalizer to control gain, slope and/or amplitude of a first signal stream of the at least two upstream signal streams sent by users to a transmission center (Figure 5, Page 2, paragraph 0039-0045) as taught by Jung in order to maintain signal strength (Page 1, paragraph 0002, Page 2, paragraph 0027) as disclosed by Jung. Therefore, it would have been obvious to one of ordinary skill in the art to modify Williamson to include a low pass filter to provide a choke AC power to line distribution device and to extract AC power from the input to provide power to the power supply (Column 4, lines 26-62) as taught by Jelinek in order to provide uninterrupted service to subscriber with a maintained power supply (Column 1, lines 20-60, Column 2, lines 1-9) as disclosed by Jelinek.

Regarding Claim 86, Williamson, Terry, Jung and Jelinek disclose all the limitations of Claim 84. Terry discloses the compensation unit further comprises a communication network line distribution unit coupled to the output connection of the compensation unit for receiving the downstream signal, the line distribution unit having an output connection for providing the downstream and upstream signal (Figure 1, 34, Column 5, lines 7-32).

Regarding Claim 87, Williamson discloses in a communications network utilizing a communications media infrastructure for transmission of a broadband signal

representative of information units received from and sent to external information sources is met by a communications network (Figure 1) utilizing media infrastructure (Figure 1, 20) for transmission of broadband analog signal representative of information units or television data received from external information sources and information units or data is sent to cable operations center or external source (Figure 2A, bottom left). Adams discloses that the back end LAN facilitates session management and transactional management services (Column 3, lines 43-55), and the back end LAN provides data to the cable operations center or external information source (Figure 2A). Williamson discloses the information units or analog signals encoded into modulated electronic signals (Column 3, lines 27-35), the signals multiplexed into the broadband electronic signal (Figure 2A, 54), from a transmission center via diverse electronic components operative in the preservation of the transmitted signal to a plurality of users (Figure 1, Figure 2A) and from the plurality of users via the communication media network via the diverse electronic components operative in maintaining the functional characteristics of the transmitted broadband signal to the transmission center (Figure 1, Figure 2A, Column 3, lines 47-60), a method of sending information across an extended frequency range or high end frequency range(Figures 4, 5, 6). Williamson discloses combining signals representative of the information received from information sources into a combined broadband signal modulated across a high frequency range (Figure 1, Figure 2A). Williamson discloses superimposing signals representative of information units received from additional information sources onto the broadband signal (Figure 1, 18, Figure 2A, Column 3, lines 27-35); modulating and transmitting the combined

broadband signal across an extended frequency range or the high end frequency range to a plurality of users or to a transmission center (Figure 1, Figure 2A, Column 3, lines 47-60); separately amplifying the broadband signal to and from the plurality of users for compensating for line drop losses due to network infrastructure topography (Column 4, lines 39-42, Figure 4, Figure 6, 120, 122); adding gain to the broadband signal for compensating for signal loss in opposing directions (Column 3, lines 47-60, Column 4, lines 39-50), separately filtering the broadband signal dividing the broadband signal according to frequency regions (Figure 6, 122, 120) and providing a signal in a frequency range already in use via low pass filters (Figure 6, 122). Williamson is silent on the extended frequency range comprises frequencies beyond 1 GHz, tuning the divided signal for controlling the division of the divided signal into predefined frequency regions, and whereby utilizing a standard transmission medium previously operating in significantly narrower bandwidth for transmission in the extended frequency range, separately adding gain and slope to the broadband signal to and from the plurality of users, providing a signal in a frequency range to a distribution unit, extracting by a choke AC power to a power supply for supplying power to amplifying circuits.

Terry discloses a cable television network (Figure 1), from a headend for transmitting television signals to customer premises (Column 4, lines 38-50, Column 5, lines 33-41) and amplifying line drop losses (Figure 1). Terry discloses over the network transmission the enhanced range of frequencies comprising an extended frequency range comprises frequencies beyond 1 GHz for additional channels (Column 5, lines 33-53, Column 6, lines 1-10). Terry discloses that the additional channels are in

the extended frequency range from 550-1150 MHz (Column 5, lines 43-43). Terry discloses providing a signal in a frequency range to a distribution unit (Figure 1, 34, Column 4, lines 7-40), and tuning the divided signal for controlling the division of the divided signal into predefined frequency regions or data is received at the terminals, which necessarily tunes the divided signal (Column 7, lines 7, lines 44-61); whereby utilizing a standard transmission medium previously operating in significantly narrower bandwidth for transmission in the extended frequency range (Figure 1, 12, 16). Jung discloses a compensation unit comprising a first and a second amplification sections comprising separately adding gain and slope to and from the plurality of users for compensating for signal loss (Figure 5, Page 2, paragraph 0037, 0041-0044). Jelinek discloses AC power to line distribution device a power supply-to-supply power to the amplifying circuits and choke to extract AC power from the input port to provide power to the power supply (Column 4, lines 26-62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Williamson to include an extended frequency range beyond 1 GHz for additional channels (Column 5, lines 33-53, Column 6, lines 1-10), providing a signal in a frequency range to a distribution unit (Figure 1, 34, Column 4, lines 7-40), and tuning the divided signal for controlling the division of the divided signal into predefined frequency regions or data is received at the terminals, which necessarily tunes the divided signal (Column 7, lines 7, lines 44-61); whereby utilizing a standard transmission medium previously operating in significantly narrower bandwidth for transmission in the extended frequency range (Figure 1, 12, 16) as taught by Terry

as there is an increasing desire for additional capacity in CATV distribution networks (Column 1, lines 41-51) as disclosed by Terry. Therefore, it would have been obvious to one of ordinary skill in the art to modify Williamson to include a compensation unit comprising a first and a second amplification sections comprising one or more equalizers which allow control of gain, slope and/or amplitude of the selected extended frequency range in the first or second direction of the communication network respectively to correct cable attenuation slope over frequency introduced into the selected extended frequency range (Figure 5, Page 2, paragraph 0037, 0041-0044) as taught by Jung in order to maintain signal strength (Page 1, paragraph 0002, Page 2, paragraph 0027) as disclosed by Jung. Therefore, it would have been obvious to one of ordinary skill in the art to modify Williamson to extract by a choke AC power to a power supply for supplying power to amplifying circuits (Column 4, lines 26-62) as taught by Jelinek in order to provide uninterrupted service to subscriber with a maintained power supply (Column 1, lines 20-60, Column 2, lines 1-9) as disclosed by Jelinek.

Regarding Claim 88, Williamson, Terry, Jung and Jelinek disclose all the limitations of Claim 87. Terry discloses a range of 950 MHz to 1150 MHz, which is within the claimed range and therefore anticipates the claimed range of 1 GHz to about 3 GHz.

Regarding Claim 89, Williamson, Terry, Jung and Jelinek disclose all the limitations of Claim 87. Williamson discloses utilizing a plurality of forward channels and distributing video, analog and digital information (Column 3, lines 15-25, Column 4, lines 1-6). Adams discloses a plurality of forward channels and distributing audio, video, and

data information unit on (Column 4, lines 33-46, Figure 5). Terry discloses a plurality of channels (Column 5, lines 33-40).

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farzana E. Hossain whose telephone number is 571-272-5943. The examiner can normally be reached on Monday to Friday 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on 571-272-7331. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FEH
February 2007


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